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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,605	03/20/2001	Shunji Baba	1614.1142	9323

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EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 04/23/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/811,605		Applicant(s) BABA ET AL.	
Examiner Brian K Talbot		Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,7 and 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,7 and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. The response filed 4/17/03 has been considered and entered. Claims 1,3,6,7, and 13-24 remain in the application.
2. In light of the amendment filed 4/17/03, 35 USC 112 second paragraph rejection has been withdrawn as well as the rejection under 35USC 102 over JP '276.

Claim Rejections - 35 USC § 103

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2).

Takamori (6,319,317 B1) teaches coating a film on a wafer by applying a resin to the center of the wafer, spinning the wafer to disperse the resin to uniformly coating the wafer. A sensor (105) connected to a controller (110) monitors the spreading of the resin and controls either the speed of the spinning and/or amount of resin applied to produce the desired coating.

Takamori (6,319,317 B1) fails to teach this process on a printed wiring board and not a semiconductor wafer.

Konishi et al. (6,491,452 B2) teaches a similar process where centrifugal forces are utilized to form a uniform coating on a circular substrate. Konishi et al. (6,491,452 B2) further teaches that the substrate is a semiconductor wafer but is not limited as such and can include other substrates such as printed boards.

Therefore, it would have been obvious at the time the invention was made for one skilled in the art to have had a reasonable expectation of achieving similar success with coating a printed

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wiring board by the process of Takamori (6,319,317 B1) instead of a wafer as evidenced by Konishi et al. (6,491,452 B2).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2).

Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) fails to teach the “measuring” device being of a fluorescent type.

It is the Examiner’s position that the use of fluorescence is commonplace in the art of “measuring/monitoring” a coating and hence, it would have been within the skill of one practicing in the art to have utilized any well know measuring/monitoring technique such as fluorescence to obtain the desired results.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) further in combination with Nakasu et al. (6,213,356 B1).

Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) fails to teaching measuring/monitoring the drop prior to contact with the substrate.

Nakasu et al. (6,213,356 B1) depicts monitoring a dispensed droplet of coating material by a sensor (25) prior to contacting the substrate or monitoring the residual material on the nozzle.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Takamori (6,319,317 B1) in combination with Konishi et al.

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(6,491,452 B2) process by incorporating a measuring/monitoring device to measure the droplet prior to contact with the substrate as evidenced by Nakasu et al. (6,213,356 B1) with the expectation of achieving similar results, i.e. a more controlled deposition of the coating material.

With respect to changing the distance of the nozzle from the substrate or to monitoring the nozzle's tip, it is the Examiner's position that these differences are conventional in the art as well as being commonplace. The distance from the substrate is arbitrary and effects the spread of coating material. The art teaches monitoring both the droplet and the coating material dispensed and it is the Examiner's position that one skilled in the art would have been suggested that monitoring the nozzle tip could be done to avoid clogging or unnecessary deposition.

Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) further in combination with Nakasu et al. (6,213,356 B1), Smith et al. (5,377,961) or Yost et al. (5,855,323).

Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) fail to teach forming a solder ball at the tip of a nozzle prior to being detached to a substrate.

Nakasasu et al. (6,213,356 B1), Smith et al. (5,377,961) or Yost et al. (5,855,323) all teach solder ball formation prior to application to a substrate.

Therefore, it would have been obvious at the time the invention was made to have modified Takamori (6,319,317 B1) in combination with Konishi et al. (6,491,452 B2) process by forming a solder ball at the nozzle tip prior to deposition as evidenced by Nakasu et al. (6,213,356 B1), Smith et al. (5,377,961) or Yost et al. (5,855,323) with the expectation of achieving similar results.

Response to Amendment

4. Applicant's arguments filed 4/17/03 have been fully considered but they are moot in view of the rejection above.

Applicant's arguments regarding the premature Final are moot in view of the non-finality of this Action.

With regards to the imaging step being unclear, the rejection has been withdrawn due to the amendment.

With regards to the non-responsiveness regarding claim 2, claim 2 has been canceled and hence discussion regarding this claim is moot. In addition, amendment to claim 1 reciting spreading instead of stretching avoids the 35 USC 112 rejection.

With regards to the rejection over JP '276, the reference has been withdrawn as prior art.

With respect to claims 13-24, Applicant argued that the references do not teach the claimed subject matter. The Examiner disagrees. The references are relied upon for teaching forming a solder ball prior to being dispensed on the substrate.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 6AM-4PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 872-9765 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.



Brian K Talbot
Primary Examiner
Art Unit 1762

BKT
April 18, 2003